foreign particulate material. In the latter instance, however, the process is less active than that developing in an acute infection such as measles. Nothing could be adduced to show there is any specialization of the endothelium lining the capillaries. The proliferative reaction was localized to the capillaries in the vicinity of the irritating masses (carmine) lying in the alveoli. In no instance was there observed proliferative activity on the part of endothelium lining the lymphatics of the lung. The migration and fate of the mononuclear phagocytes of the lung formed the subject of the third paper of this series (PERMAR, *Jour. Med. Res.*, 1920–21, xlii, 209). This constituted a study of what was virtually an acute experimental anthracosis in which the red granules of carmine powder replaced the familiar black granules of air-borne carbon. The vital stain was useful here, as in the preceding experiments, to enable the newly proliferated endothelial phagocytes to be identified. They could thus be traced to the air spaces, where they phagocyted the free carmine granules, and thence to the terminal lymphatics. It is of interest that the cells do not manifest the same indifference regarding their point of exit from the air spaces as they do to the point of entrance. They showed a tendency to pass into and through the somewhat heavier walls of the atria from which they have easy access to the finest pulmonary lymph channels. They were then traced along the lymphatics to the hilus, and were found in the lymph nodes here in small numbers as early as twenty-four hours after the introduction of carmine into the lung. It is worthy of note that the sudden flooding of the air sacs by the carmine powder in suspension is dealt with by the same mechanism as is the gradually insufflated carbon in anthracosis.

HYGIENE AND PUBLIC HEALTH

UNDER THE CHARGE OF

MILTON J. ROSENAU, M.D.,

PROFESSOR OF PREVENTIVE MEDICINE AND HYGIENE, HARVARD MEDICAL SCHOOL, BOSTON, MASSACHUSETTS,

AND

GEORGE W. McCOY, M.D.,

DIRECTOR OF HYGIENIC LABORATORY, UNITED STATES PUBLIC HEALTH SERVICE, WASHINGTON, D. C.

Making Morbidity Reports Aid the Epidemiologist.—KELLY and STEVENS (*Public Health Reports*, 1921, xxxvi, 1219), of the California State Health Department, describe the method they use for securing the greatest aid from morbidity records furnished to the health officer. There is constructed for each county a cumulative curve showing the average of each disease for each geographical unit for the preceding five years, and a similar cumulative curve is plotted for each disease each week and at once shows where the current curve deviates from the average or normal. Index maps show by different colored

pins the prevalence above the five-year average and an incidence above the preceding year; again a separate map for each disease. Spot maps for each disease show all cases for any given quarter of the year. A card record is used for comparison over larger periods and gives the precise location where control measures are necessary.

Modern Steam Laundry Processes as a Means of Destroying Vermin.—PIERCE, HUTCHINSON and MOSCOWITZ (*Public Health Reports*, 1921, xxxvi, 710) studied this subject with special reference to the utility of laundry methods for the destruction of body lice, and conclude their report with the following recommendations: "In view of the foregoing tests there is proposed as a measure in disinsection of woolens a process which not only will disinsect but also will cleanse the garment and return it to the owner in good form, without undue shrinkage. This process consists of the following measures: (1*a*) In the washer run a current of live steam for fifteen minutes, revolving the cylinder every five minutes, and discharging water of condensation every five minutes. Remove the garments and shake until almost dry. This requires only a few shakes. (1*b*) Submerge in water at 165° F. for twenty minutes, without motion, except a few revolutions every five minutes; (2) wash fifteen minutes at 131° F. in heavy suds and light load; (3) rinse three times, three minutes each, at 131° F.; (4) extract; (5) run in tumbler for fifteen minutes, at a minimum of 140° F. Live steam (1*a*) or very hot soaking (1*b*) are advised only in cases in which there is no heated tumbler (5) available, or where the garments are suspected of being contaminated with very resistant spore-bearing bacteria. In other words, the usual laundry methods for the disinfection and disinfestation are recommended because of their added value of cleansing. There can be no doubt that the ordinary processes of the laundry will kill all lice and their eggs, and probably all insect life. It is proved that woolens can be treated at a temperature which will kill lice and bacteria, without undue shrinkage—that is 131° F. Washing in heavy suds, with motion; 165° F. soaking, without motion; live steam, without motion, and occasionally removing the water of condensation; or dry tumbling of wet garments; these do not cause undue shrinkage of woolens."

Botulism and Spoiled Canned Food.—The U. S. Public Health Service (*Public Health Reports*, 1921, xxxvi 751) reviews a fatality from eating home-canned stringbeans which were canned by an approved process but which were obviously unfit for consumption. A warning is given that danger is incurred by the use of canned goods that are not entirely sound.

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All communications should be addressed to—

DR. GEORGE MORRIS PIERSOL, 1913 Spruce St., Philadelphia, Pa., U. S. A.